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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,861	11/13/2003	Brian Keyse	FMC1620PUS/202-1446	8643
28395	7590	05/03/2006	EXAMINER	
BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			BEHNCKE, CHRISTINE M	
			ART UNIT	PAPER NUMBER
			3661	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/712,861	Applicant(s) KEYSE ET AL.	
	Examiner Christine M. Behncke	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-28 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

This office action is in response to the application filed 13 November 2003, in which claims 1-28 were presented for examination.

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

**Group I.** Claim 1, drawn to an adaptive control method for an electronic ratio shift controller including pressure boost time as pressure at the oncoming friction element is boosted and starting pressure for the oncoming friction element at the beginning of a ratio change and the steps of: monitoring measured operating conditions during a current power-off downshift; and adjusting the adaptive shift characteristics for a downshift as determined by the measured operating conditions, classified in class 701, subclass 51+.

**Group II.** Claim 2, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a start of a ratio change during a pressure boost for a current downshift; and reducing the pressure boost time by a value determined by calibration, classified in class 701, subclass 51+.

**Group III.** Claim 3, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting an aggressive ramping of starting pressure on the oncoming clutch; and increasing oncoming friction element starting pressure, classified in class 701, subclass 58+.

**Group IV.** Claim 4, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a large torque transfer time error during a current shift; and changing pressure boost time to reduce the error, classified in class 701, subclass 58+.

**Group V.** Claim 5, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a large torque transfer error and a tie up due to pressure boost during a current shift; and reducing boost time by the larger of torque transfer error and tie up error, classified in class 701, subclass 60+.

**Group VI.** Claim 6, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error during a current shift; and changing pressure boost time to reduce the error in a subsequent shift, classified in class 701, subclass 60+.

**Group VII.** Claim 7, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error and a negative controller effort during a current shift; and changing pressure boost time to reduce the error in a subsequent shift, classified in class 701, subclass 60+.

**Group VIII.** Claim 8, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer error and a positive controller effort during a current shift; and changing

pressure boost time to reduce the error in a subsequent shift, classified in class 701, subclass 60+.

**Group IX.** Claim 9, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer error and a tie up due to pressure boost during a current shift; and reducing pressure boost time by the larger of torque transfer time error and tie up in a subsequent shift, classified in class 701, subclass 60+.

**Group X.** Claim 10, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to boost time and a negative controller effort in a current shift; and reducing pressure boost time by the larger of torque transfer error and tie up error and decreasing oncoming friction element starting pressure, classified in class 701, subclass 60+.

**Group XI.** Claim 11, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error and a positive controller effort in a current shift; and reducing pressure boost time by the larger of torque transfer error and a tie up error and increasing oncoming friction element starting pressure, classified in class 701, subclass 60+.

**Group XII.** Claim 12, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to boost time and a slip time error; and reducing boost time by larger of torque transfer error and tie up error and changing

oncoming friction element starting pressure, classified in class 701, subclass 60+.

**Group XIII.** Claim 13, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer error, a tie up due to boost time, a slip time error and negative controller effort; and reducing pressure boost time by the larger of torque transfer error and tie up error and decreasing oncoming friction element starting pressure by the larger of controller effort adjustment and slip time adjustment, classified in class 701, subclass 60+.

**Group XIV.** Claim 14, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to pressure boost time, a slip time error and a positive controller effort; and reducing pressure boost time by the larger of torque transfer error and tie up error and increasing oncoming friction element starting pressure by the larger of controller effort and slip time adjustment, classified in class 701, subclass 60+.

**Group XV.** Claim 15, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to boost and an initial slip time error; and reducing pressure boost time by the larger of torque transfer error and tie up error and changing oncoming friction element starting pressure, classified in class 701, subclass 60+.

**Group XVI.** Claim 16, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to boost, an initial slip time error and a negative controller effort; and reducing boost time by the larger of torque transfer error and tie up error and decreasing oncoming friction element starting pressure, classified in class 701, subclass 60+.

**Group XVII.** Claim 17, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to boost, an initial slip time error, and a positive controller effort; and reducing boost time by the larger of torque transfer error and tie up error and increasing oncoming friction element starting pressure, classified in class 701, subclass 60+.

**Group XVIII.** Claim 18, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to boost, slip time error and initial slip time error; and reducing boost time by the larger of torque transfer time error and tie up error and changing oncoming friction element starting pressure, classified in class 701, subclass 60+.

**Group XIX.** Claim 19, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to boost, slip time error and initial slip time error and a negative controller effort; and reducing boost time by the larger of torque transfer error and tie up error and decreasing starting pressure of

the oncoming friction element by the larger of controller effort and slip time adjustment, classified in class 701, subclass 60+.

**Group XX.** Claim 20, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a tie up due to boost, slip time error and initial slip time error and a positive controller effort; and reducing boost time by the larger of torque transfer error and tie up error and increasing starting pressure of the oncoming friction element by the larger of controller effort and slip time adjustment, classified in class 701, subclass 60+.

**Group XXI.** Claim 21, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error and a slip time error; and reducing boost time and changing oncoming clutch starting pressure based on slip time, classified in class 701, subclass 60+.

**Group XXII.** Claim 22, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a slip time error and a negative controller effort; and reducing boost time and decreasing oncoming friction element starting pressure by the larger of controller effort and slip time adjustment, classified in class 701, subclass 60+.

**Group XXIII.** Claim 23, drawn to an adaptive control method for an electronic ratio shift controller comprising detecting a small torque transfer time error, a slip time error and a positive controller effort; and reducing



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boost time and increasing oncoming friction element starting pressure by the larger of controller effort and slip time adjustment, classified in class 701, subclass 60+.

**Group XXIV.** Claims 24-28, drawn to an adaptive control method for an electronic ratio shift controller comprising starting pressure for the offgoing friction element at the beginning of a ratio change and the steps of: monitoring measured operating conditions during a current power-off downshift and adjusting the adaptive shift characteristics for a downshift as determined by the measured operating conditions, classified in class 701, subclass 61+.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24 are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, all the subcombinations are drawn to distinct inventions have separate utility as shown above and are not obvious variants, as each group does not require the particulars of the other subcombinations. See MPEP § 806.05(d).

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their

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different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103 (a) of the other invention.

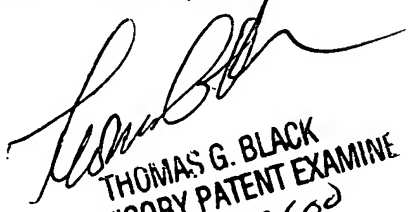
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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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